DOCUMENT RESUME

ED 311 534 EA 021 292

AUTHOR West, Gary
TITLE Giving Teachers the Time To Teach: The Classroom Management System in the Public Schools of South Carolina.
PUB DATE Jan 89
NOTE 7p.; Document contains small print.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classroom Techniques; *Computer Managed Instruction; *Computer Uses in Education; Elementary Secondary Education; *Instructional Improvement; *Management Information Systems; Public Schools
IDENTIFIERS *South Carolina Classroom Management System; *South Carolina Education Improvement Act 1984

ABSTRACT

The major components of South Carolina's Classroom Management System (CMS) are described, and CMS components are related to the reduction of teacher time and paperwork in the instructional planning and record-keeping processes. Specific detail is given for the instructional management component of CMS because of its potential for managing curriculum and instruction. The South Carolina Education Improvement Act requires school personnel to document that standards are met and that remediation is successfully provided in cases where standards are not met. The discussion is not limited to the use of CMS in remedial or compensatory settings, however. Hardware, software, and training programs are discussed with respect to their impact on the classroom teacher and the services provided by that teacher. Essentially, CMS is a pilot program used to develop teacher-level management tools that will computerize and automate the assessment and diagnosis of student needs, the selection and application of instructional prescriptions, and the recording and reporting of the results of those processes and procedures. (JAM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED311534

Giving Teachers the Time to Teach

The Classroom Management System in the Public Schools of South Carolina

Gary West
Greenwood School District 50
Greenwood, South Carolina 29648

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gary West

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

January 1989

EA 021 292

Giving Teachers the Time to Teach

The Classroom Management System in the Public Schools of South Carolina

Gary West
Greenwood School District 50
Greenwood, South Carolina 29648

ABSTRACT

This presentation is an overview of South Carolina's Classroom Management System, a pilot program to develop teacher-level management tools that will computerize and automate the assessement and diagnosis of student needs, the selection and application of instructional prescriptions, and the recording and reporting of the results of those processes and procedures.

Major components are described, with details relating those components to the reduction of teacher time and paperwork in the instructional planning and record keeping processes. Specific detail is given for the Instructional Management component of CMS because of its potential in managing curriculum and instruction. That potential exceeds its record keeping capabilities.

The discussion is not limited to the use of CMS in remedial or compensatory settings.

The hardware, software, and training components are discussed with respect to their impact on the classroom teacher and the services provided by that teacher.

OUTLINE

INTRODUCTION
The Education Improvement Act of 1984
The Paperwork Problems and Curriculum Concerns
Reducing the Paperwork Problems and Improving Curriculum
COMPONENTS AND TIMELINES
Components of CMS
Computer Hardware and Peripherals
Computer Software
Training in the Use of Hardware and Software
CMS Implementation Timelines
THE TYPICAL SCENARIO
The Summer Setup
The Early Weeks
The Regular School Year
CURRICULUM MANAGEMENT
IMS Components
Curriculum Definition
Assessment and Diagnosis of Student Needs
Selection and Application of Prescriptions
Documentation of Appropriate Instructional Services
Cautions and Concerns
CONCLUSION

INTRODUCTION

The Education Improvement Act of 1984

In 1984, the South Carolina State Legislature enacted the Education Improvement Act (EIA) in an effort to change the direction and impact of the public schools in that State. The EIA is a comprehensive, long-range program to improve the educational opportunities available to students.

District and school performance standards are mandated, with the State taking over Districts or schools that do not meet those standards for two consecutive years. Principal and teacher performance standards are established, with remediation required for all who do not meet the State's standards. Student performance standards are established with remediation required for all who do not meet those standards in the basic skills areas (originally reading, writing, and mathematics; science is scheduled to be added to the basic skills standards).

In addition to defining minimum performance standards, the State offers incentive awards to Districts, schools, and teachers who prove to be superior with regard to defined sets of excellence standards. For Districts and schools, the awards can be relatively large amounts of money for use in areas not required by the State's Defined Minimum Program (DMP). For teachers, the monies are personal awards that have no restrictions regarding use.

The Paperwork Problems and Curriculum Concerns

With the implementation of the EIA and its sets of standards, school personnel are made responsible for documenting that standards are met and that remediation is successfully provided in those cases when standards are not met. That documentation includes information concerning district, school, principal, teacher, and student performance.

The first and most immediate problems stemming from the EIA are the collection, analysis, and reporting of data supporting performance and remediation. The management of the paperwork created by the EIA--which, ironically, includes a mandate to reduce teacher paperwork--has been a massive task for district and school administrators and for classroom teachers.

As the State began to monitor the implementation of the EIA, Districts have found that they are cited for items if there is no documentation to support those items. Without such documentation, the State could not confirm that positive educational activities were taking place. A statement has been attributed to one member of a State monitoring team: "If it isn't documented, it didn't happen."

Documentation of activities is an essential part of every educator's day. However, research--and word of mouth--indicate that the number of minutes used for teaching and the number of minutes used for planning for teaching has decreased as teachers have spent more of that time documenting the things they have time to do. At the local level, the motto has become, "If it is documented, I didn't have time to do it."

Reducing the Paperwork Problems and Improving Instruction

The State has implemented two major programs in an effort to reduce the paperwork problems experienced at the local district level. The first program, Osiris, has been designed to reduce the paperwork at the district and school levels. The second, The Classroom Management System, is designed to reduce the paperwork at the teacher level and to share the data stored in the administrative files.

Both programs are computer-based and the State has made the financial commitment to placing the hardware and software in the hands of local educators. In addition to the physical components of the program, the State has committed sufficient financial resources to training district and school staff in the use of those physical components.

The Classroom Management System (CMS) provides the tools for reducing teacher paperwork. More importantly, it provides specific tools for helping teachers manage instruction within the district's curriculum, with integration of the basic skills curriculum into other content areas. Similarly, non-basic skills curriculum content can be integrated into basic skills instruction through the management system. That integration can be coordinated through CMS with minimal time and paperwork required of teachers.

South Carolina's CMS is the first attempt, by any State, to standardize and coordinate a management system for all teachers within the State. It represents a major step forward in the operation of the State's public schools within an accountability framework that automates the documentation of needs and services to meet those needs. The impact made by CMS can be significant--if implemented to its fullest potential.

ED 021 292

This paper discusses CMS in terms of its reduction of teacher paperwork and in terms of its potential for managing the district curriculum and instruction.

COMPONENTS AND TIMELINES

The following quotation comes from the "South Carolina Department of Education Classroom Management System Requirements Specifications" document dated December 15, 1987:

"The success of the Classroom Management System is dependent on the understanding of [its] applicability and [on] utilization of the software by teachers."

Although the title of the document appears to be typical of the bureaucratic phrasing one finds at the State level, the excerpt from the document indicates an understanding of the needs of classroom teachers. It must be noted that CMS is not an administrative package; it is not an instructional package; it is a classroom-level management tool designed to help teachers deal with the management of teaching tasks.

CMS consists of three components: (1) computer hardware and peripherals, (2) computer software, and (3) training in the use of both.

Computer Hardware and Peripherals

Each school in South Carolina has received a computer and school management software (the Osiris package from Tamarac, Inc.). That school management system provides the databases from which CMS will work. As CMS is implemented throughout the State, schools are receiving additional computers that are to be placed in locations accessible to teachers at all times during the working day. The initial ratio of teachers per computer ranges from about twenty-to-one in larger schools to eight-to-one in many smaller schools. As CMS grows, the teacher/computer ratio will decrease dramatically.

The teacher computers will be networked to a fileserver from which teachers will have access to a student database that includes all students receiving instruction in any content area. Each network will include the following equipment:

(1) The fileserver will be an IBM/IBM-compatible computer with an 80386 CPU running at 20 megahertz. Most districts will use the NCR PC916, although many are using the IBM PS/2 Model 80. The fileserver will be equiped with a 286 megabyte fixed disk that will contain the Osiris software and files as well as the CMS software and files.

(2) Novell Netware Version 2.11 or above will be used to run the system.

(3) Each CMS teacher workstation will be an IBM/IBM-compatible with an 80286 CPU running at 10 megahertz (or faster). Most districts will use the NCR PC810, although many are using the IBM PS/2 Model 50. Each workstation will also have a 30-megabyte fixed disk to be used for local data storage. EGA color video will be standard for each workstation.

(4) Each workstation on the network will be equiped with a dot-matrix printer that can be accessed from the local workstation without going through the network spool.

(5) Each network will be equiped with a laser printer. That peripheral is necessary because the curriculum and testing modules require graphics capabilities for instructional materials.

(6) Each network will be equiped with an optical scanner. Teachers will be able to administer tests using answer sheets that are "bubbled" by students. Those answer sheets can be scanned and graded by the software.

(7) Each network will be equiped with a telephone modem and a dedicated dataline. Teachers will be able to access resources within the district, the State, and major universities from their workstations.

Specific hardware components will be discussed later in this paper. Those discussions will focus on the implementation of specific program components as a function of the existing hardware.

Computer Software

The CMS software will consist of three major modules, in the initial piloting of the program. Those modules are being developed through a system of specification, review, modification, and implementation. The review process includes a series of teacher reviews and recommendations followed by meetings of district-level coordinators to make specific recommendations to the program developers and programmers.

The software will include the following:

(1) A computer-based gradebook will be provided. Teachers will enter grades from the keyboard in the same manner they enter grades into a paper gradebook. Also, grades can be automatically entered from scanned answer sheets, without the teacher's keying those. Provisions for entering grades from ASCII files stored on diskette will also be included. It will also be possible for teachers to bubble grades on scan sheets and scan those to a specific column in the electronic gradebook. Those last two capabilities will permit teachers to grade items at home and prepare those grades for entry into the gradebook upon return to school the next day.

(2) Test generation and scoring will provide a major tool for determining individual student needs. The test generator will provide access to State administered tests, district-made tests, school-made tests, and teacher-made tests. Test items banks will be developed at each of those levels and will correlated to the State's basic skills objectives. When a test is created, the items will be validated with regard to the measurement of actual needs of students.

Tests can be scored through the use of the optical scanner provided on each school's network. The grades assigned to those tests can be automatically placed in the electronic gradebook.

(3) The instructional management system (IMS), built into CMS, will provide some of the most powerful tools ever developed for educators. The IMS will include assessment and diagnotic tools for determining student needs. It will include tools for the selection and application of instructional activities specifically designed to meet the diagnosed needs of those students. It will link the State's basic skills objectives to the State Testing Program, which includes the Basic Skills Assessment Program (BSAP) and the Comprehensive Tests of Basic Skills (CTBS).

The real power of CMS will come from the IMS component. It will link all areas of the State's basic skills program to the local district's curriculum. That curriculum will be correlated to the State's objectives, to skills, sub-skills, and content skills associated with mastery of those objectives. Resources, including basal texts and supplemental materials, will be referenced in the process of assessment, diagnosis, prescription, and instruction.

Detailed information about the gradebook, the test generator, IMS, and the coordination and integration of curricular areas will be discussed later in this paper.

Training in the Use of Hardware and Software.

The State has designated a considerable portion of the financial resources for CMS to the training of teachers to use the CMS hardware and software. The commitment to that training is evident from the quotation cited in the introduction to this paper. The CMS program will not be successful if teachers do not understand its applicability or its utility.

Training will be implemented at the district level by district CMS coordinators who will be trained through the State program. Resources, such as manuals and video tapes, are provided by the State for the use in the district training sessions.

Districts may train local teachers in any manner deemed appropriate at the local level. Many districts use graduate-level courses through State-supported colleges and universities to provide core instruction for small groups of teachers in each school. Those teachers then become resource persons within their schools, helping other teachers understand the system.

Examples of some of the training strategies will be given later in this paper.

CMS Implementation Timelines

Ten districts will pilot the CMS program during a three-year period through the end of the 1990-1991 school year. Six schools in each of those districts will be involved in the pilot process. Hardware, software, and training are to be provided by the State, with assistance from the pilot schools and districts. The development of each of

those components will be based on review and recommendation from teachers, administrators, and computer-oriented staff.

The hardware will be installed in each school by the end of December, 1988. That hardware can then be used for training teachers in keyboarding skills, software concepts, and general computer use. Word processing and desktop publishing have been identified as desirable training tools that can then remain as real tools to supplement and complement the CMS software.

The gradebook software will be delivered in June, 1989, and will be placed in full use for the 1989-1990 school year. All teachers in the pilot schools will use the electronic gradebook for recordkeeping. The links between the gradebook and the reporting of grades to parents will be discussed in the next section of this paper.

The test generator and the test scoring system will be delivered in April, 1990. Shortly after that, the complete IMS system and the test item banks will be delivered to the pilot districts.

During the summer of 1990, all components of CMS will be put into place. The 1990-1991 school year will be the first full pilot for the complete system, including the test item banks developed by the State.

Following the pilot year, other districts will be brought into CMS and the system will be disseminated throughout the State.

THE TYPICAL SCENARIO

The hardware provided for CMS is simply the vehicle through which the software is implemented. The software provides the real working power of CMS. Before looking at the software details, however, it may be important to understand the potential impact of CMS on the instructional process. (This may be likened to checking the answers in the back of the book before working through the assigned problems. It can provide some direction to our understanding of the details between the problem and the answer.)

The typical CMS scenario may be something like this:

The Summer Setup

During the summer months, all students' schedules are completed within Osiris, the school management system from which CMS pulls student information. Teachers' schedules are automatically completed and filed as the students' schedules are completed. From test data stored in Osiris, profile sheets are printed for classes, small groups, and individual students. Those profile sheets provide information about deficiencies related to the State's basic skills objectives.

The Early Weeks

During the first two weeks of school, tests are generated and administered from the CMS test generator. Those results are recorded as the answer documents are scanned or as specific data are entered from the keyboard or composite scan sheets. Those results are printed for each teacher, listing each student with specific skill and sub-skill needs relating to the overall basic skills objectives.

With those extended profiles, CMS will print prescriptions that include curriculum resources and cross-references that can be used in planning instruction. The cross-references will facilitate the integration of basic skills concepts in instruction for all content areas. That is, the prescription may include specific reading resources that can be incorporated into the current social studies and science units being taught by the teacher. Additionally, social studies and science resources may be listed for use in providing reading instruction on the level needed by the students in that teacher's class.

The Regular School Year

When instruction is completed for a specific skill or concept, the teacher can ask CMS to provide test items to measure mastery of that skill or concept. The teacher can personally select items from those displayed by CMS or the teacher can ask CMS to select those items randomly. The selected items will have been previously validated with regard to the skill or concept for which mastery is to be tested. The test can be printed to the local printer or to the network laser printer. Where appropriate, the items will contain the graphic information to accompany the text for those items. The appropriate number of copies can be made and distributed to students.

At the appropriate grade levels, the students can bubble their answers on scan sheets. The scannable sheets can be graded as they are scanned. The teacher will score non-bubbled tests manually, as usual.

Grades determined by the software from scanned answer sheets will be entered automatically into the electronic gradebook, as instructed by the teacher. Other grades can be entered at the keyboard, from an ASCII file containing student ID numbers, the test reference data, and the grade, or from a composite grade sheet bubbled by the teacher. The first of those three options must be done at a network workstation. The other two options can be completed outside the school setting (yes, some teachers will still insist on working at home) and imported through a disk file utility or through the scanner.

The screen image of the gradebook must be as much like the paper gradebook as possible. That will flatten the learning curve for teachers who are learning to use the software. The screen should list students' names at the left, with columns for grades to the right. The top of the screen/page should have space for short labels to identify the test or other graded item. There can be a discription line at the bottom of the screen, in which the teacher can give a detailed description of the skills included on the test. As the teacher moves the cursor from one column to the next, the description line will change to show the appropriate information.

In addition to looking like a paper gradebook, the gradebook software should use only English words, phrases, and sentences in displaying information for use by the teacher. There is no reason, in this day of user-friendly software, to provide anything that will not promote the software-friendly user. Teacher should not be required to learn a new language or a new way of thinking in order to use the CMS software.

That testing, scoring, and recording process can be repeated up to 99 times in a grading period. When that grading period is over, the teacher can confirm that the system has used the proper weights for each graded item and can then finalize those grades. For example, one teacher may weight major tests twice as much as lesser tests and may not count homework assignments in the final grade for students. That teacher will have built that weighting system into his or her gradebook. Another teacher may use an entirely different weighting system (on none at all). That other teacher will have built his or her system independently of that used by the teacher down the hall.

When the grading period is over and the teacher is satisfied that all grades are recorded, CMS can be told to compute final averages (based on the individual weighting systems). A verification report can be printed by the teacher. When all grades are verified, CMS can be told to send those grades, via the network, to the school's fileserver where Osiris will store those in its grade file. When the time comes to print report cards, those are done in the school's office by clerical staff. Report cards are then sent to parents in whatever manner is prescribed by local policy and procedure.

In the grading and grade reporting processes, it should be noted that there is no bubbling of grade sheets or exchanging of grade sheets among teachers. Yet, teachers retain complete control over the grades given to students. That control involves individualized weighting systems, verification (and, if needed, modification) of grades prior to recording and reporting, and modification of final grades at a later time (contingent on local policy).

This scenario is repeated for each grading period, with assessment, diagnosis, prescription, and instructional plans provided by CMS. The recording and reporting of grades is managed entirely by CMS, without taking teacher time to do so.

End-of-the-year reports will summarize student achievement during the school year. Those reports will maintain the appearance of the existing paper formats so that no new learning curve is created for the teachers who must interpret those reports.

CURRICULUM MANAGEMENT

Test generation and scoring and grade recording and reporting are major takers of teacher time and

the CMS contribution to saving some of that time is significant. That time saved can be given to students in the classroom and shared with those pseudo-strangers--also known as family members--with whom those teachers live.

However, the saving of time is only one of the benefits of CMS at the classroom teacher's level. Its ability to manage the curriculum and instruction provides much more power and potential for teacher use. That ability, while assisting in the reduction of non-instructional tasks and time, also provides correlation, cross-reference, and integration of the curriculum in ways not possible without the use of computer technology. With proper planning at the district level, classroom instruction can become more efficient and more effective at the classroom level.

IMS Components

The instructional management system component of CMS provides three basic services to teachers in South Carolina's public schools. Those services include (1) the assessment and diagnosis of individual student needs, (2) the selection and application of prescriptions to remedy those needs, and (3) the record keeping tasks relating the South Carolina state testing program to the basic skills program.

All of those services are dependent on a defined curriculum with specified learning objectives that have been structured along a learning continuum. Each objective along that continuum must, then, be classified in a manner that will identify skills and subskills that can be taught and learned in order to master the objective at the appropriate point along that continuum.

Curriculum Definition. The South Carolina basic skills program identifies such objectives and lists the subskills that must be mastered in order to show mastery of the stated objectives. The skills continuum identifies grade level, the objectives for that grade level, and the subskills for each of the objectives at that grade level.

At the classroom level, additional assessment must be made with regard to appropriate sub-subskills and content skills that would further define the subskills to be mastered by students. The sub-subskills and the content skills complete the "curriculum learning objectives hierarchy" that must be defined, at the classroom level, for each student.

It is at this level of diagnosis, prescription, and recordkeeping that the IMS component of CMS will provide power in planning and implementing instructional programs appropriate for individual students. It is at this level that proper planning by the district can clearly define the curriculum in terms of objectives, skills, subskills, sub-subskills, and content skills. The resulting "curriculum learning objectives database," managed by IMS, can grow with the needs of the district, the district's teachers, and the district's students.

From the curriculum learning objectives database, teachers can have immediate access to reports and outlines that detail those objectives from several different perspectives--and will detail those for a specific group of students or for an individual student.

A summary report will list the general objectives and the subskills of each. This report will provide a summary of the district's curriculum, the continuum along which it lies, and the hierarchical structure of the objectives along that continuum. From this report, teachers can understand the overall scope of the instructional program and the impact that their participation has within that scope.

A student detail report will specify the specific learning objectives for each student served by the teacher. Those objectives will be clearly defined and the IMS record keeping process will provide detailed information about mastery of those objectives. Non-mastery will be further detailed in the student report, listing sub-subskills and content skills that are to be addressed to promote mastery.

A content correlation report can provide information about resources available for use in delivery of instruction. That correlation report can include information about specific student needs in one content area that may be addressed in other content areas, as well. That correlation and integration of curriculum components will add to the efficiency and effectiveness of instruction. That process will provide reinforcement of basic skills from more than one instructional setting (a positive factor from the student's perspective) and will provide more instructional time for those skills within the limited instructional time available during school hours (a positive factor from the curricular perspective).

Assessment and Diagnosis of Student Needs. After a clear definition of each curricular component, students' needs, within that curriculum, can be assessed and diagnosed. The assessment of content skill needs, sub-subskill needs, and subskill needs will be accomplished through the use of test item banks developed at the State, district, school, and teacher level.

Each test item in the test item banks will be classified based on the hierarchy of learning objectives and corresponding skills. When an item is selected from the item bank for inclusion on a test, the teacher can be certain that that item has been validated with regard to its measuring some skill related to the overall objective.

Two assessment records will be kept for each student. One of those, the Continuous Assessment Record (CAR), will be available to teachers at all times. It will contain continuously updated information regarding achievement for each student in the class. The Permanent Assessment Record (PAR) will be updated at the end of each school year, using the information from the CAR. (Not that anyone would ever use such an analogy, but it might be noted that the CAR is the vehicle with which students are brought up to PAR.)

The information maintained in the CAR will come from updating the mastery/non-mastery status of students following each assessment. That maintenance can be a clerical function (from the keyboard) or an automatic function (from scanning individual answer sheets or bubbling summary sheets).

From the assessment data, diagnostic reports will be readily available to the teacher. Those can include, but not be limited to the following:

(1) The Student Profile Report will be printed yearly and will include summary needs information for each student.

(2) The Student Assessment Report will be printed periodically to provide information about continuing progress and achievement.

(3) The Student History Report will be printed as needed to provide direction in planning for the immediate needs of each student.

(4) The Class Profile Report will summarize assessment data for the teacher's class, as a whole.

(5) The Group Profile Report will list students by objective, indicating those that have common needs.

(6) The Parent Report will indicate mastery/non-mastery status for the objectives defined for the students instructional program.

Selection and Application of Prescriptions. When diagnosis of student needs is completed, IMS can provide direction in the selection and application of instructional services to remediate those needs. That direction will come from the instructional prescriptions database, which will be built based on the district's curriculum, the available resources, and the location of the student's needs along the learning continuum.

Each item in the instructional prescriptions database will be classified according to defined criteria. When a prescription report is printed for a student or a group of students, it will include a complete description of the proposed prescription, whether the prescription is an activity or a resource, the medium of presentation of the prescription, the current availability of the prescription (including its location within the school or district), the correlation to the learning objective and mastery skills, and the source of the prescription components.

Teachers will have access to several reports from the instructional prescriptions database. The Prescription Summary Report will list prescriptions in the database. That list may include all prescriptions or may include only those selected based on a criterion given by the teacher. The Prescription Detail Report will provide all the classification information for one or more prescriptions, providing detailed information about the applicability of the prescription for a specified objective. The Prescription Student Report will provide detailed information about proposed prescriptions for individual students.

Documentation of Appropriate Instructional Services. In South Carolina, EIA requires the documentation of appropriate services to students who have basic skills needs.

That documentation process is extensive and is designed to track student data from assessment and diagnosis to mastery of skills and objectives as measured by the State's testing program. That documentation is a time-consuming task, requiring many hours of teacher and clerical time to complete. IMS will provide the services needed to greatly reduce the manual record keeping and to greatly decrease the non-instructional time used for that record keeping.

Much of the required record keeping will be automatically done through the CAR and PAR facilities in the assessment component. Those records will indicate need and growth as those needs are met. Other record keeping requirements of EIA will also be automatically addressed. Those will include the following, at a minimum:

(1) Curriculum will be correlated to the State's BSAP objectives, including the incorporation of the kindergarten objectives into the readiness program.

(2) The management system for diagnosis, remediation, and placement of students will be standardized and evident.

(3) Evidence of parent notification will be maintained for the readiness program, the testing program, the identification of instructional needs, and the placement of the student in appropriate programs.

(4) The status of students with regard to the Exit Exam will be automatically maintained.

(5) For each student, IMS will document the curriculum objectives that remain unmastered.

(6) Program descriptions, components, and timelines will be documented for all remedial and compensatory programs.

In addition to the above record keeping tasks (all of which will be automated to some degree), the IMS module will maintain records regarding the results of the State's testing program and will provide a variety of reports that can be used in interpreting those results and in applying those results in constructive ways to the instructional process.

In the final analysis, the records kept in IMS will document student performance and achievement. Those records will be updated at the end of each school year, leaving a clear record along the learning continuum for the beginning of the next year's instruction. That record keeping process is currently done manually by the teachers in South Carolina. (In Greenwood School District 50, teachers keep those records on "Make-A-Difference" cards. The acronym for those cards is also an appropriate adjective for those who must manually manipulate them.)

Cautions and Concerns

Before closing, it is appropriate to point our some concerns about CMS--specifically, about its IMS component.

Because the IMS component of CMS offers so much power in managing curriculum and instruction, it may be misused in several ways. Those misuses are not an inherent function of IMS itself; they are more a function of the educational process (whether automated or manual). The following cautions relate to possible perceptions that may develop about the purpose of IMS.

The first caution concerns the development of curriculum components that are designed to fit the perceived uses of the management system. A good management system should fit the previously designed curriculum--the curriculum should not be designed to fit the management system. The latter is the same as "teaching the test"--at a higher level, of course.

Proper use of CMS is predicated on the existence of the appropriate curriculum for the individual school district. When that curriculum exists and it is properly designed to offer a skills continuum through which students pass, its components can be coded within the management system so valid data are collected and reported from within that system.

The second caution concerns the potential limiting of the CMS to the basic skills areas (in South Carolina, those are reading, writing, mathematics, and science). Its management capabilities go well beyond those basic skills areas. The CMS Requirements Specifications document states: "The Instructional Management component of the CMS is in no way intended to be restricted to usage in a remedial environment."

However, most state testing programs (including South Carolina's) measure achievement only in the basic skills areas areas and report that achievement in terms of meeting or not meeting a set of minimum standards. There may be an unnecessary focus on those content areas with regard to the development of test item banks, diagnostic tools, prescriptions, and referencing instructional resources.

IMS has the capacity to assist teachers as they provide an integrated instructional program, using resources from several content areas to teach basic skills. It can assist in integrating basic skills instruction in the provision of services in other content areas. Its capacity to do so is limited only by the planning at the district level and the provision of the cross-references linking all those content areas.

Not only will IMS address the basic skills areas, it can be used to manage the curriculum for all content areas. Additionally, it can be used to correlate and integrate those content areas so teachers can get "double duty" from each instructional activity they provide in the classroom.

CONCLUSION

South Carolina's CMS pilot program is an attempt to provide management tools to teachers so that record keeping, planning, and delivery of instruction can be automated as much as possible. CMS is not an administrative or instructional program.

CMS includes three major software components: (1) the instructional management system, (2) the test generation and scoring system, and (3) the electronic gradebook system. Each of those is coordinated with Osiris, the State's school management system. That coordination results in class rosters for gradebooks, automatic printing of report cards, electronic record keeping for grades and transcripts, and other features that reduce teacher paperwork and redundant record keeping.

The hardware, software, and training are provided by the State, as part of the Education Improvement Act of 1984.

BIBLIOGRAPHY

Hill, Jack D., Jr., Ph.D., "The Pathways Project: South Carolina's Bold Attempt to Reduce Teacher Paperwork Through Microcomputer Technology"; T.H.E. Journal; November, 1987; pp. 87-91.

Tamarac Systems, Inc.; "South Carolina Department of Education Classroom Management System Requirements Specifications"; December 15, 1987

Tamarac Systems, Inc.; "South Carolina Department of Education Classroom Management System Requirements Specifications"; July 25, 1987.

Tamarac Systems, Inc.; "South Carolina Department of Education Classroom Management System Gradebook System Specifications"; August 26, 1988.

OTHER PATHWAYS DIRECTIONS

The Pathways Project is being expanded to include other areas of school and classroom management. Those areas include, but are not limited to the following:

Elementary School Version of Osiris
License Checks for Bus Driver Applicants
Student Identification System
Access to Teacher Certification Records
TRIMS (Textbook Inventory System)
Transportation System (School Buses)
School Lunch System
CSAB Scoring and Reporting (in District)
BEDS Forms from Osiris Teacher File
Improved Test Reporting Module in Osiris